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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,992	07/30/2003	Sheng Ma	YOR920030160US1	7734

7590 03/07/2006	EXAMINER
Ryan, Mason & Lewis, LLP	CHANNAVAJJALA, SRIRAMA T
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Locust Valley, NY 11560	

ART UNIT	PAPER NUMBER
2166	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on *30 July 2003*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-21* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-21* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All   b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/21/03*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-21 are presented for examination.

Drawings

2.   The Drawings filed on 9/15/2003 are <u>acceptable</u> for examination purpose.

Information Disclosure Statement

3.   The information disclosure statement filed on 11/21/2003 is in compliance with

the provisions of 37 CFR 1.97, and has been considered and a copy is enclosed with

this Office Action.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   *Claims 1,3-8,9-15,17-21, are rejected under 35 U.S.C. 102(b) as being anticipated by*

Tuzhilin et al [hereafter Tuzhilin], US Patent No. 6292797, published on Sept 18,2001.

6.   As to claims 1,8,15, Tuzhilin teaches a system which including 'a method of

mining attribute associations in a relational data set' [col 4, line 23-38, col 6, line 31-35,

line 43-49, Abstract], Tuzhilin is directed to patterns in a database, more specifically,

pattern templates and data mining queries [see Abstract], Tuzhilin also teaches

"supermarket" as an example of maintaining various information or relational data sets

in a database for example database may have data sets related to items, customers,

promotions, demographic data and like [col 4, line 23-38], further, Tuzhilin also teaches

mining association rules that including specific data fields from the table as detailed in

col 6, line 31-35;

        'obtaining multiple items from the relational data set' [col 6, line 37-53], Tuzhilin

teaches data mining query specifies set pattern to obtain multiple items from the

relational data set as detailed in col 6, line 37-53;

        'discovering attribute associations using (i) multi-attribute mining templates

formed from at least a portion of the multiple items' [col 6, line 54-67, col 7, line 1-2],

Tuzhilin specifically teaches "pattern templates" and associated rules as detailed in

col 6, line 50-53 having multiple attributes specified in the pattern template corresponds

to Tuzhilin's col 6, line 65-67 because Tuzhilin specifies set of attributes [col 6, line 67];

'(ii) one or more mining preferences specified by a user' [col 5, line 26-29, col 7, line 29-

33], Tuzhilin specifically teaches user specifies pattern using user input device as

detailed in fig 1, col 5, line 26-29.

7.   As to claims 3,10,17, Tuzhilin disclosed 'one or more mining preferences

specified by the user [col 3, line 28-32, col 5, line 26-29], comprise specification of at

least (i) one or more desired multi-attribute mining templates' [col 6, line 54-67, col 7,

line 1-4], Tuzhilin specifically teaches multiple attributes [col 6, line 65-67] in the pattern

templates [col 6, line 54-55]; '(ii)one or more rules concerning values of attributes in the

multi-attribute mining templates' [col 7, line 38-49], Tuzhilin specifically teaches pattern

discovery elements executes data mining queries or pattern templates assigned to the

nodes of the tree for example as detailed in fig 2, further pattern discovery element [5]

generates associated rules related to pattern classes as detailed in col 7, line 42-44.

8.   As to claims 4,11,18, Tuzhilin disclosed ' generating candidate patterns at a

template level' [col 7, line 50-67], Tuzhilin specifically teaches pattern template

associated with files in a directory structure as detailed col 7, line 50-67.

9.   As to claims 5,12,19, Tuzhilin disclosed 'candidate patterns of multi-attribute

mining templates by merge-joining patterns of nodes of at least a portion of the

templates without pre-sorting' [col 6, line 24-43].

10.   As to claims 6,13,20, Tuzhilin disclosed 'maintaining one or more occurrence

buffers to count occurrences of patterns' [col 8, line 38-46], Tuzhilin specifically teaches

pattern discovery optimization that effectively manages occurrences of patterns.

11.   As to claims 7,14,21,Tuzhilin disclosed 'pruning candidate patterns at a template

level' [col 9, line 64-67, col 10, line 1-3].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

12.   **Claims 2,9,16, are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Tuzhilin et al [hereafter Tuzhilin], US Patent No. 6292797 as applied to claims 1,8,15 above,

and further **in view of**

13.   As to claims 2,9,16, Tuzhilin teaches 'multi-attribute mining templates' [col 7, line

3-24], however, it is noted that Tuzhilin does not specifically teach 'anti-monotonicity

property'. On the other hand, Jiawei disclosed 'anti-monotonicity property' [page 12,

slide 70].

        It would have been obvious to one of the ordinary skill in the art at the time of

Applicant's invention to incorporate the teachings of Jiawei et al. into determining

actionable patterns in a database of Tuzhilin et al. because both Tuzhilin and Jiawer are

directed to "data mining" [Tuzhilin: Abstract; Jiawer: page 1, slide 3], both are directed to

mining pattern or mining templates' [Tuzhilin: col 2, line 32-35, col 6, line 54-55, col 7,

line 3-4; Jiawer: page 4-5, slides 21-25] and both are from the same field of endeavor.

        one of the ordinary skill in the art at the time of Applicant's invention to

incorporate the teachings of Jiawei et al. into determining actionable patterns in a

database of Tuzhilin et al. because that would have allowed users of Tuzhilin to use

"mining associated rules in large databases" like "super market" to specifically query

frequent item sets, also creating mining frequent patterns by creating conditional

pattern-based [se Jiawei: page 5, slide 25], also applying "anti-monotone" constraints

that applied to data sets to determine any violation to the constraints, bringing the

advantages of frequent data sets generated i.e., discovering all frequent data sets that

satisfy constrains as detailed in the examples at page 12, slide 70.

Conclusion

The prior art made of record

a.   US Patent No.   *6292797*

b.   Jiawel Han et al. "Data Mining: Concepts and techniques",

slides for textbook, chapter 6, 84 slides, Jan 17,2001, http://www.cs.sfu.ca.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108.   The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 571-273-8300 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

sc
Patent Examiner.
November 22, 2005.

SRIRAMA CHANNAVAJJALA
PRIMARY EXAMINER